

A NEW SPECIES OF BRICKELLIA SUBGENUS PHANEROSTYLIS
(ASTERACEAE) FROM NUEVO LEON MEXICO.

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Brickellia is a genus of about 100 species largely confined to the drier regions of the western United States and adjacent Mexico. B. L. Robinson (1917) was the last to treat the group in its entirety but Robinson and King (1977) made substantial modifications to the group by extracting from this several small, presumably monophyletic units and treating them as genera. Clearly some of these groups were anomalous in Brickellia and would appear to have relationships elsewhere, to judge from their microcharacters and differing base chromosome number ($x=10$; versus $x=9$ in Brickellia). As treated by King and Robinson (1972), Phanerostylis K. & R. is exceptional among these in possessing a base chromosome number of $x=9$ and a stylar node like that of Brickellia. It does have 5(6)-ribbed achenes, however, which readily separates it from the 8(12)-ribbed achenes which are characteristic of Brickellia. Nevertheless, following Harcombe and Beaman (1967) who transferred these taxa from Eupatorium to Brickellia, Turner (1978) in his description of yet another species (B. nesomii) suggested that the 3 species concerned be treated as a subgenus of Brickellia. King and Robinson (1981), with their transfer of Barroetia glandulifera Brandg. to Phanerostylis, added a fourth species to the group in their attempt to "restore a sane concept to [the genus] Phanerostylis".

In the present paper I add a fifth name to Phanerostylis, still believing that the group is best treated as a subgenus of Brickellia. In order to bring up-to-date our knowledge of the group I have prepared a key and distribution map for the four species from north-central Mexico. I have excluded the annual species, Phanerostyles glandulosa, which I prefer to retain in Barroetia until its problematical generic position is resolved (Barroetia is currently undergoing revisional study by Mr. Scott Sundberg, graduate student at The University of Texas, Austin).

Key to Species

1. Leaves densely and conspicuously glandular-punctate; involucre (4)5-8 seriate.
2. Mature peduncles mostly 6-12 cm long, beset with minute glandular trichomes, 0.1-0.2 mm long; involucre 6-8 seriate; blades without multiseptate crisped hairs 2. B. pedunculosa

2. Mature peduncles mostly 2-6 cm long, beset with purple glandular trichomes 0.4-1.0 mm long; involucre 4-6 seriate; blades beset on both surfaces with numerous, multiseptate, crisped hairs 3. B. nesomii

1. Leaves inconspicuously, if at all, glandular-punctate; involucre 3-5 seriate.

3. Stems 5-15(20) cm high, mostly unbranched, at least not shrubby; leaves mostly 2-3 times as long as wide; involucre 4-5 seriate, 11-14 mm long, viscid; peduncles 2-6(7) cm long, coarsely pubescent with short stout purple trichomes ... 4. B. hintoniorum

3. Stems 20-40 cm high, branched above, bushy; leaves mostly 1-2 times as long as wide; involucre 3-4 seriate, 9-10 mm long, scarcely viscid, if at all; peduncles 4-10 cm long, pubescent with minute, non-purplish, trichomes ... 1. B. coahuilensis

1. BRICKELLIA COAHUILENSIS (Gray) Harcombe & Beaman

Eupatorium coahuilensis Gray

Phanerostylis coahuilensis (Gray) K. & R.

Harcombe and Beaman (1967) have carefully compared this taxon with B. pedunculosa pointing out the salient features which distinguish between them. The former occupies largely calcareous soils in the mid to lower montane elevations of Coahuila, Nuevo Leon and San Luis Potosi (Fig. 1).

2. BRICKELLIA PEDUNCULOSA (DC.) Harcombe & Beaman

Eupatorium pedunculosa DC.

Phanerostylis pendunculosa (DC.) K. & R.

A well-marked species; widespread in the volcanic montane regions of northcentral Mexico from San Luis Potosi and Zacatecas southward to Hidalgo and Michoacan (Fig. 1).

3. BRICKELLIA NESOMII B. L. Turner

Phanerostylis nesomii (B. L. Turner) K. & R.

As noted below under B. hintoniorum, this species is closely related to B. pedunculosa but superficially resembles B. hintoniorum.

4. BRICKELLIA HINTONIORUM sp. nov.

Brickellia coahuilensis accedens sed caulibus brevioribus simplicibus, pedunculis brevioribus, capitulis magnioribus 4-5 seriatis, pubescentiis grossioribus.

Perennial, mostly unbranched, rhizomatous herbs 5-20 cm high; stems slender purplish, densely pubescent with short stout purplish trichomes. Leaves ovate to ovate-elliptical, mostly 1.5-2.5 cm long, 0.5-1.0 cm wide; petioles 2-6 mm long; blades veiny beneath, with short coarse incurved hairs along the 3 major veins, the margins 3-5 dentate on each side. Heads monocephalic, the peduncles mostly 2-6 cm long, beset with stout purple glandular-trichomes, these often interspersed with long multiseptate incurved eglandular hairs. Involucre turbo-campanulate, viscid, 4-5(6) seriate, 11-14 mm long; bracts 3-4 nervate, variously pubescent, the outermost often reflexed. Receptacle plane. Florets 40-50; corollas glabrous, rosy to rose-white, 6.0-6.5 mm long; tube ca 3 mm long, the throat narrowly funnelform, 3.0-3.5 mm long. Style branches of outer florets with white, flat, oblanceolate appendages 1.3-1.8 mm wide. Achenes 5-6 mm long, 5-7 ribbed, moderately hispid; pappus of ca 20 ciliate setae 5-6 mm long, purplish-tinged below. Chromosome number, $n=9$ pairs (Nesom R569, LL).

TYPE: MEXICO. NUEVO LEON: Sierra La Marta, rocky summit, 3600 m, 31 Aug 1980, G. B. Hinton et al. 17970 (TEX; isotypes to be distributed by J. Hinton).

ADDITIONAL SPECIMENS EXAMINED: MEXICO. COAHUILA: Munic. Arteaga; Sierra del Coahuilón, 3150 m, 28 Jul 1985, Hinton et al. 18904 (TEX); Sierra La Marta, Primer Pico al E de Cerro Morro, ca 3600 m, 21 Jul 1985, McDonald 1693 (TEX); Sierra Coahuilón, SE ladera, burned areas in subalpine zone, 22 Jul 1985, McDonald 1763 (TEX); Cima Sierra La Viga, ca 3600 m, 24 Oct 1984, McDonald & Gomez 1146 (TEX). NUEVO LEON: Cumbre de Cerro Potosí, subalpine zone, ca 3550 m, 26 Jul 1985, McDonald 1822 (TEX); W side Cerro Potosí, ca 8000 ft, 24 Jul 1977, Nesom R569 (LL).

According to label data on Nesom R569, Brickellia hintoniorum is rare on the west side of Cerro Potosí occurring as a large colony in shallow soil along a rocky ledge; McDonald & Gomez 1146, note the species as common in rocky places on the S side of Cerro Potosí; while the holotype itself notes the species as forming colonies on the rocky summit of Sierra La Marta. All of these sites are between 3500-3600 meters.

Brickellia nesomii is somewhat more widespread but also occurs as colonies in pine-oak woodlands at about the same elevation but presumably in somewhat wetter, deeper soils. At least both species have not been collected at the same site nor, as indicated below, have intermediates between these taxa been noted.

Harcombe and Beaman (1967) cite several collections of Brickellia pedunculosa which I refer to B. nesomii (Nuevo Leon: Cerro Potosí, Beaman 4502 and McGregor et al. 325). They apparently did not exam collections of what I have called B. hintoniorum. I was initially inclined to their view but as additional collections were assembled from about Cerro Potosí it

became clear that the higher elevations in this region contained two, similar but distinct, taxa: B. nesomii and B. hintoniorum. The former relates to the wide spread southern species, B. pedunculosa, and the latter relates to the more northern B. coahuilensis, a species of lower, more xeric, regions where the predominant substrate is limestone. Of course an alternative, more conservative, approach would be to recognize B. nesomii and B. hintoniorum as but altitudinal varieties of B. pedunculosa and B. coahuilensis respectively. But as species go in *Brickellia* they are as distinct as most and as viewed in the field they "act" like species, occurring as parapatric elements without intergrades, either between each other, or as populational intergrades with the species, B. pedunculosa and B. coahuilensis to which they are most closely related.

It is a pleasure to name this species for the G. B. Hinton family of San Rafael, Mexico, a village on the lower northwest slopes of Cerro Potosi. I find it appropriate that the three most prolific collectors in the subalpine regions of Nuevo Leon (Hinton, McDonald and Nesom) should each have a *Brickellia* named in their honor, each of which is largely endemic to the area concerned.

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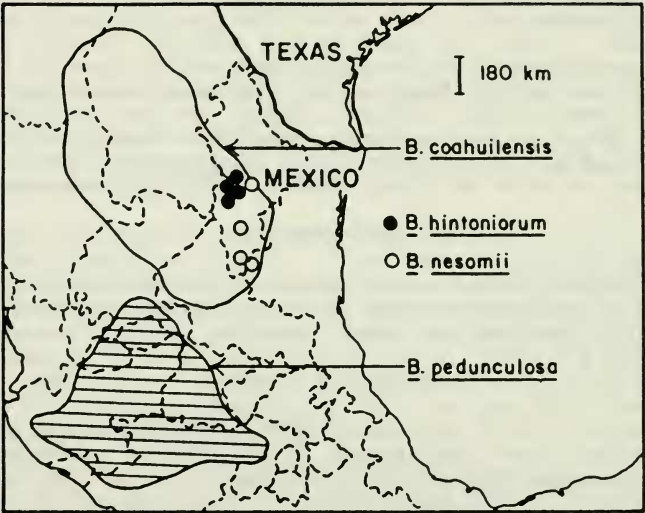


Fig. 1. Species of Brickellia, Subgenus Phanerostylis.